Practice: Codominance and Incomplete Dominance

1. Set up keys for the phenotypes listed in each set. Remember that the "medium" trait must always be heterozygous. Choose your own letter to represent each trait.

a) Birds can be blue, white, or white with blue-tipped feathers.

b) Flowers can be white, pink, or red.

c) A Hoo can have curly hair, spiked hair, or a mix of curly and spiked.

d) A Sneech can be tall, medium, or short.

e) A Bleexo can be spotted, black, or white.

2. For the above list, which of the letters represent codominant traits and which are incomplete.

Codominant _____ Incompletely Dominant _____

3. In Smileys, eye shape can be starred, circular, or a circle with a star. Write the genotypes for the pictured phenotypes

4. Show the cross between a star-eyed and a circle eyed.
   What are the genotypes of the offspring?
   What are the phenotypes?

5. Show the cross between a circle-star eyed, and a circle eyed.
   What are the genotypes of the offspring?
   What are the phenotypes?

A curly haired person and a straight haired person mate and all their offspring have wavy hair (note that wavy hair is a phenotype in between that of the curly and straight haired individuals).

6. Show a cross between two wavy haired individuals.
   What are the genotypes of the offspring?
   What are the phenotypes?

7. Show a cross between a wavy haired individual and a curly haired individual.
   What are the genotypes of the offspring?
   What are the phenotypes?

Blood Type Inheritance Problems

Blood type in humans is controlled by multiple alleles. Type O is recessive (ii) to Type A (I^A I^A or I^Ai), Type B ($I^B I^B$ or I^Bi), and Type AB ($I^A I^B$).

1. If a woman is homozygous for Type A blood and her husband is Type O, what is the probability that their offspring would have any one of the 4 possible blood types?

2. If a woman is heterozygous for Type A and her husband is heterozygous for Type B, what is the probability of blood types that their offspring would have?

3. If a woman is blood Type AB and her husband is blood Type O, what is the probability of blood types that their offspring would have?

4. A woman has blood Type O, her baby has blood Type A: Is it possible that a man who has the blood Type AB could be the father? Show the Punnett Square and explain.

5. A baby has blood type B. What possible blood types could his parents have?